REMARKS

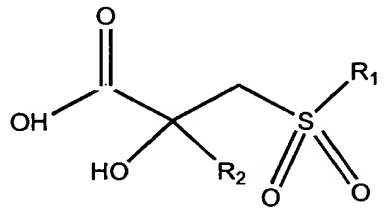
Responsive to the Official Action mailed April 3, 2003, the Examiner's comments have been studied. Claims 1-36 are currently pending. In view of the following remarks, the application is submitted as being in condition for allowance.

Claims 4, 6 and 20-36 are active. Claims 1-3, 5 and 7-19 have been withdrawn from consideration. Claim 4 is now amended and consistent with that amendment claim 26-30 are now cancelled. Claims 4, 6 and 31-36 are rejected under 35 U.S.C. § 103(a) as obvious over the "deprotection" product found in scheme 1, page 95 of Freskos et al. (WO 98/39326). Claim 6 has been cancelled in order to preclude a double patenting rejection over claim 1 of U.S. Patent 6,437,177 B1 (copy enclosed).

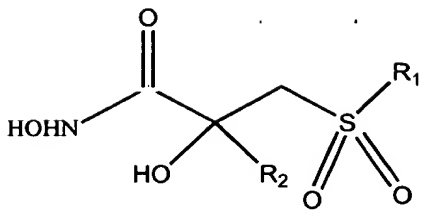
The Applicants note support for the amendment of claim 4 in the specification at page 9, lines 21-31 which names more preferred R_2 groups. C_{1-12} alkyl, C_{2-12} alkenyl, and C_{2-12} alkynyl are not so named. This supports the reduction in claim scope by deletion of these less preferred R_2 groups from claim 4.

REJECTION--35 U.S.C. 103

The Examiner states that Freskos et al. (WO 98/39326) teaches a generic group of compounds which embraces compounds here claimed and for this proposition cites scheme 1, page 95 of the reference, presumable for its disclosure of the "deprotection" product of



Presumably, the R_1 and R_2 of such "deprotection" product is the same R_1 and R_2 as the Freskos reference teaches for its claimed compounds of the formula



Freskos at page 8, line 20 – page 9, line 19 and page 12, line 15 – page 16, line 15 states that

> R_1 is a substituent that contains a 5- or 6-membered cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical **bonded directly to the depicted SO_2 -group** and having a length greater than about that of a fully extended hexyl group and less than about that of a fully extended eicosyl group. In addition, R_1 defines a three-dimensional volume, when rotated about an axis drawn through the SO_2 -bonded 1-position and the 4-position of a 6-membered ring radical or drawn through the SO_2 -bonded 1-position and the center of 3,4-bond of a 5-membered ring radical, whose widest dimension in a direction transverse to the axis of rotation is about that of one furanyl ring to about that of two phenyl rings.
>
> R_1 preferably contains a single aromatic or heteroaromatic ring that is itself substituted with another substituent, R_3. R_1 most preferably contains a phenyl ring, Ph, that is itself has a substituent, R_3, at the 4-position. R_3 is preferably a phenyl, a phenoxy, a phenylazo, a thiophenoxy, an anilino, a benzamido, a nicotinamido, an isonicotinamido, a picolinamido or an ureidophenyl group that can itself be substituted at the meta- or para-position or both by a single atom or a substituent containing a longest chain of up to eight atoms, excluding hydrogen.

Further Freskos makes clear at page 16, lines 14-17 that the R_1 group is :

> **An SO_2 -linked cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical** is a 5- or 6-membered single-ring that is itself substituted with one other substituent, R.sup.3. The SO_2 -linked single-ringed cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical is R_3 -substituted at its own 4-position when a 6-membered ring and at its own 3-position when a 5-membered ring.

In stating the basis for rejection under 35 USC § 103 the Examiner states that the R_1 group of the deprotection product of Freskos "is cycloalkyl, heterocycle, aryl, etc." whereas the R_2 group "is hydrocarbyl, (N-morpholino)methyl, (N-pyrrolidino)methyl, or (N-thiomorpholino)methyl." Accordingly, relative to claim 4 the Examiner is identifying the R_1 group of the Freskos compound to be what claim 4 says is:

R_1 is

. . .

d) $-(CH_2)_h-C_{3-8}$ cycloalkyl,

e) $-(CH_2)_h$-aryl,

f) $-(CH_2)_h$-het,

wherein "h" equals 0. Only when "h" = 0 is the R_1 substituent of claim 4 a 5- or 6-membered cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical **bonded directly to the depicted SO_2 –group** as the Freskos reference requires. With "h" = 0 then the R_2 group of claim 4, which the Examiner says is hydrocarbyl, (N-morpholino)methyl, (N-pyrrolidino)methyl, or (N-thiomorpholino)methyl, equates to claim 4's recitation of

R_2 is

a) C_{1-12} alkyl,

b) C_{2-12} alkenyl,

c) C_{2-12} alkynyl,

d) $-(CH_2)_h-C_{3-8}$ cycloalkyl,

e) $-(CH_2)_h-C_{3-8}$ cycloalkenyl,

f) $-(CH_2)_h$-aryl,

g) $-(CH_2)_h$-het,

h) $-(CH_2)_h$-Q.

Since "h" = 0 the R_2 group of claim 4 can not be "(N-morpholino)**methyl**, (N-pyrrolidino)**methyl**, or (N-thiomorpholino)**methyl**" as the Examiner asserts. This leaves R_2 of claim 4 as being a hydrocarbyl which is unsubstituded by C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl, aryl, het, or Q; such as "a) C_{1-12} alkyl, b) C_{2-12} alkenyl, or c) C_{2-12} alkynyl."

Claim 4 has now been amended to delete there from the recitation that R_2 can be "a) C_{1-12} alkyl, b) C_{2-12} alkenyl, or c) C_{2-12} alkynyl." This removes any overlap with the scheme 1,

page 95 "deprotection" product of the Freskos et al. reference, and hence removes any basis for a 35 U.S.C.§ 103 rejection.

As respects claims 33 and 35-36, even without amendment of claim 4 these claims were patentable over the scheme 1, page 95 "deprotection" product of the Freskos et al. reference.

Since "h" = 0 the R_2 group of claim 33 can not be "(N-morpholino)**methyl**, (N-pyrrolidino)**methyl**, or (N-thiomorpholino)**methyl**" as the Examiner asserts. This leaves R_2 of claim 33 as being a hydrocarbyl which is unsubstituded by C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl, aryl, het, or Q; such as "a) C_{1-12} alkyl, b) C_{2-12} alkenyl, or c) C_{2-12} alkynyl." Claim 33 restricts the R_2 group to the groups (d) – (h) wherein "h" equals to a value of 1 or greater. As before noted when "h" equals to a value of 1 or greater then one does not have a compound of Freskos et al. (WO 98/39326) which requires a substituent that contains a 5- or 6-membered cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical **bonded directly to the depicted SO_2 –group.**

The scheme 1, page 95 "deprotection" product of the Freskos et al. reference does not apply to the genus of compounds to which claims 35-36 are limited. The "deprotection" product of the Freskos et al. reference requires a hydroxyl group at the "Y" position whereas claim 35 requires a fluoro group and claim 36 requires a NR_9R_{10} group at this "Y" position.

CONCLUSION

The Applicants respectfully submit that this application is now in condition for allowance, in view of the above remarks. Early notification to that effect is earnestly solicited.

Respectfully submitted,

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